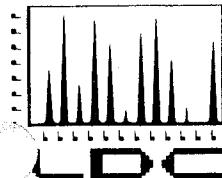


APPENDIX C

Data Validation



LABORATORY DATA CONSULTANTS, INC.

7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Haley & Aldrich, Inc.
9040 Friars Road, Suite 202
San Diego, CA 92108
ATTN: Ms. Beth Breitenbach

October 15, 2002

SUBJECT: Boeing C-6 Site, Data Validation

Dear Ms. Breitenbach,

Enclosed is the final validation report for the fraction listed below. This SDG was received on October 1, 2002. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 9159:

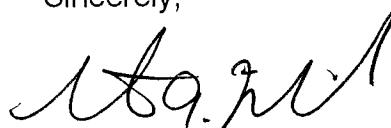
<u>SDG #</u>	<u>Fraction</u>
E21180333	Volatiles

The data validation was performed under Tier 2 and Tier 3 guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update I, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996

Please feel free to contact us if you have any questions.

Sincerely,



Steven A. Ziliak
Senior Chemist

**Boeing C-6 Site
Data Validation Reports
LDC# 9159**

Volatiles



Attachment 1

LDC #9159 (Haley & Aldrich-San Diego / Boeing Former C-6 Facility)

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS/MSD, and DUPs.

Laboratory Data Consultants, Inc. Data Validation Report

Project/Site Name: BRC Former C-6 Torrance Harbor Gateway
Collection Date: September 18, 2002
LDC Report Date: October 11, 2002
Matrix: Water
Parameters: Volatiles
Validation Level: Tier 2 & Tier 3
Laboratory: Severn Trent Laboratories
Sample Delivery Group (SDG): E2I180333

Sample Identification

EB_TAIT091802_0001
FB_TAIT091802_0001
TMW_6_WG091802_0001
TMW_6_WG091802_0001DL
TMW_12_WG091802_0001
TMW_12_WG091802_0001DL
TMW_1_WG091802_0001
TMW_1_WG091802_0001DL
TMW_1_WG091802_0002
TMW_1_WG091802_0002DL
TMW_4_WG091802_0001
TMW_4_WG091802_0001DL
TMW_7_WG091802_0001**
TMW_7_WG091802_0001DL**
TMW_5_WG091802_0001**
TMW_5_WG091802_0001DL**
TB_TAIT091802_0001
TMW_1_WG091802_0001MS
TMW_1_WG091802_0001MSD

**Indicates sample underwent a Tier 3 review

Introduction

This data review covers 19 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a Tier 3 review. A Tier 2 review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Tier 2 criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodices were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance check data were reviewed for Tier 2/Tier 3 .

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria with the following exceptions:

Date	Compound	%RSD	Associated Samples	Flag	A or P
8/1/02	Acrolein	48.141	All samples in SDG E2118033	J (all detects) UJ (all non-detects)	A
	Acetone	33.299		J (all detects) UJ (all non-detects)	

Average relative response factors (RRF) for all volatile target compounds and system performance check compounds (SPCCs) were within method and validation criteria with the following exceptions:

Date	Compound	%RSD	Associated Samples	Flag	A or P
8/1/02	Acrolein Acetone Acrylonitrile tert-Butyl alcohol 2-Butanone Tetrahydrofuran 2-Chloroethylvinyl ether	0.00144 (≥ 0.05) 0.01340 (≥ 0.05) 0.01327 (≥ 0.05) 0.00377 (≥ 0.05) 0.02603 (≥ 0.05) 0.01777 (≥ 0.05) 0.01625 (≥ 0.05)	All samples in SDG E2118033	J (all detects) UJ (all non-detects)	A

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
9/19/02	Acrolein Acrylonitrile tert-Butyl alcohol Vinyl acetate 1,1,2,2-Tetrachloroethane Hexachlorobutadiene	52.9 26.0 33.4 26.2 25.6 26.6	All samples in SDG E21180333	J (all detects) UJ (all non-detects)	A

All of the continuing calibration RRF values were within method and validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
9/19/02	Acrolein Acrylonitrile	0.00068 (≥ 0.05) 0.00983 (≥ 0.05)	All samples in SDG E21180333	J (all detects) R (all non-detects) J (all detects) R (all non-detects)	A
9/19/02	Acetone tert-Butyl alcohol 2-Butanone Tetrahydrofuran 2-Chloroethylvinyl ether	0.01431 (≥ 0.05) 0.00503 (≥ 0.05) 0.02362 (≥ 0.05) 0.01580 (≥ 0.05) 0.01516 (≥ 0.05)	All samples in SDG E21180333	J (all detects) UJ (all non-detects)	A

V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
TMW_1_WG091802_0001	1,2-Dichloroethane-d4	139 (65-135)	All TCL compounds	J (all detects)	A

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were not within QC limits. Since the sample concentration was greater than the spiked concentration, no data were qualified.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a Tier 3 review was performed. Raw data were not evaluated for the samples reviewed by Tier 2 criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
TMW_6_WG091802_0001	Chloroform	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A
TMW_12_WG091802_0001					

Sample	Compound	Finding	Criteria	Flag	A or P
TMW_1_WG091802_0001 TMW_1_WG091802_0002 TMW_7_WG091802_0001** TMW_5_WG091802_0001**	Trichloroethene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A
TMW_4_WG091802_0001	1,1-Dichloroethene Trichloroethene	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects) J (all detects)	A

Raw data were not evaluated for the samples reviewed by Tier 2 criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was within validation criteria for samples on which a Tier 3 review was performed. Raw data were not evaluated for the samples reviewed by Tier 2 criteria.

XV. Overall Assessment of Data

The overall assessment of data was acceptable. In the case where more than one result was reported for an individual sample, the least technically acceptable results were rejected as follows:

Sample	Compound	Flag	A or P
TMW_6_WG091802_0001 TMW_12_WG091802_0001	Chloroform	R	A
TMW_6_WG091802_0001DL TMW_12_WG091802_0001DL	All TCL compounds except Chloroform	R	A
TMW_1_WG091802_0001 TMW_1_WG091802_0002 TMW_7_WG091802_0001** TMW_5_WG091802_0001**	Trichloroethene	R	A
TMW_1_WG091802_0001DL TMW_1_WG091802_0002DL TMW_7_WG091802_0001DL** TMW_5_WG091802_0001DL**	All TCL compounds except Trichloroethene	R	A

Sample	Compound	Flag	A or P
TMW_4_WG091802_0001	1,1-Dichloroethene Trichloroethene	R R	A
TMW_4_WG091802_0001DL	All TCL compounds except 1,1-Dichloroethene Methylene chloride	R	A

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples TMW_1_WG091802_0001 and TMW_1_WG091802_0002 and samples TMW_1_WG091802_0001DL and TMW_1_WG091802_0002DL were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD
	TMW_1_WG091802_0001	TMW_1_WG091802_0002	
Bromodichloromethane	0.83	0.82	1
1,1-Dichloroethene	170	190	11
Chloroform	4.2	3.6	15
Tetrachloroethene	3.0	3.4	13
Trichloroethene	400	440	10
Trichlorofluoromethane	22	25	13

Compound	Concentration (ug/L)		RPD
	TMW_1_WG091802_0001DL	TMW_1_WG091802_0002DL	
1,1-Dichloroethene	220	210	5
Chloroform	4.9	3.6	31
Tetrachloroethene	3.6	3.4	6
Trichloroethene	540	520	4

Compound	Concentration (ug/L)		RPD
	TMW_1_WG091802_0001DL	TMW_1_WG091802_0002DL	
Trichlorofluoromethane	31	30	3

XVII. Field Blanks

Sample TB_TAIT091802_0001 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Compound	Concentration (ug/L)
TB_TAIT091802_0001	Acetone	6.0

Sample EB_TAIT091802_0001 was identified as an equipment blank. No volatile contaminants were found in this blank.

Sample FB_TAIT091802_0001 was identified as a field blank. No volatile contaminants were found in this blank with the following exceptions:

Field Blank ID	Compound	Concentration (ug/L)
FB_TAIT091802_0001	Acetone	7.3

BRC Former C-6 Torrance Harbor Gateway
Volatiles - Data Qualification Summary - SDG E2I180333

SDG	Sample	Compound	Flag	A or P	Reason
E2I180333	EB_TAIT091802_0001 FB_TAIT091802_0001 TMW_6_WG091802_0001 TMW_6_WG091802_0001DL TMW_12_WG091802_0001 TMW_12_WG091802_0001DL TMW_1_WG091802_0001 TMW_1_WG091802_0001DL TMW_1_WG091802_0002 TMW_1_WG091802_0002DL TMW_4_WG091802_0001 TMW_4_WG091802_0001DL TMW_7_WG091802_0001** TMW_7_WG091802_0001DL** TMW_5_WG091802_0001** TMW_5_WG091802_0001DL** TB_TAIT091802_0001	Acrolein Acetone	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Initial calibration (%RSD)
E2I180333	EB_TAIT091802_0001 FB_TAIT091802_0001 TMW_6_WG091802_0001 TMW_6_WG091802_0001DL TMW_12_WG091802_0001 TMW_12_WG091802_0001DL TMW_1_WG091802_0001 TMW_1_WG091802_0001DL TMW_1_WG091802_0002 TMW_1_WG091802_0002DL TMW_4_WG091802_0001 TMW_4_WG091802_0001DL TMW_7_WG091802_0001** TMW_7_WG091802_0001DL** TMW_5_WG091802_0001** TMW_5_WG091802_0001DL** TB_TAIT091802_0001	Acrolein Acetone Acrylonitrile tert-Butyl alcohol 2-Butanone Tetrahydrofuran 2-Chloroethylvinyl ether	J (all detects) UJ (all non-detects)	A	Initial calibration (RRF)
E2I180333	EB_TAIT091802_0001 FB_TAIT091802_0001 TMW_6_WG091802_0001 TMW_6_WG091802_0001DL TMW_12_WG091802_0001 TMW_12_WG091802_0001DL TMW_1_WG091802_0001 TMW_1_WG091802_0001DL TMW_1_WG091802_0002 TMW_1_WG091802_0002DL TMW_4_WG091802_0001 TMW_4_WG091802_0001DL TMW_7_WG091802_0001** TMW_7_WG091802_0001DL** TMW_5_WG091802_0001** TMW_5_WG091802_0001DL** TB_TAIT091802_0001	Acrolein Acrylonitrile tert-Butyl alcohol Vinyl acetate 1,1,2,2-Tetrachloroethane Hexachlorobutadiene	J (all detects) UJ (all non-detects)		Continuing calibration (%D)

SDG	Sample	Compound	Flag	A or P	Reason
E2I180333	EB_TAIT091802_0001 FB_TAIT091802_0001 TMW_6_WG091802_0001 TMW_6_WG091802_0001DL TMW_12_WG091802_0001 TMW_12_WG091802_0001DL TMW_1_WG091802_0001 TMW_1_WG091802_0001DL TMW_1_WG091802_0002 TMW_1_WG091802_0002DL TMW_4_WG091802_0001 TMW_4_WG091802_0001DL TMW_7_WG091802_0001** TMW_7_WG091802_0001DL** TMW_5_WG091802_0001** TMW_5_WG091802_0001DL** TB_TAIT091802_0001	Acrolein Acrylonitrile	J (all detects) R (all non-detects) J (all detects) R (all non-detects)	A	Continuing calibration (RRF)
E2I180333	EB_TAIT091802_0001 FB_TAIT091802_0001 TMW_6_WG091802_0001 TMW_6_WG091802_0001DL TMW_12_WG091802_0001 TMW_12_WG091802_0001DL TMW_1_WG091802_0001 TMW_1_WG091802_0001DL TMW_1_WG091802_0002 TMW_1_WG091802_0002DL TMW_4_WG091802_0001 TMW_4_WG091802_0001DL TMW_7_WG091802_0001** TMW_7_WG091802_0001DL** TMW_5_WG091802_0001** TMW_5_WG091802_0001DL** TB_TAIT091802_0001	Acetone tert-Butyl alcohol 2-Butanone Tetrahydrofuran 2-Chloroethylvinyl ether	J (all detects) UJ (all non-detects)	A	Continuing calibration (RRF)
E2I180333	TMW_1_WG091802_0001	All TCL compounds	J (all detects)	A	Surrogate spikes (%R)
E2I180333	TMW_6_WG091802_0001 TMW_12_WG091802_0001	Chloroform	J (all detects)	A	Compound quantitation and CRQLs
E2I180333	TMW_1_WG091802_0001 TMW_1_WG091802_0002 TMW_7_WG091802_0001** TMW_5_WG091802_0001**	Trichloroethene	J (all detects)	A	Compound quantitation and CRQLs
E2I180333	TMW_4_WG091802_0001	1,1-Dichloroethene Trichloroethene	J (all detects) J (all detects)	A	Compound quantitation and CRQLs
E2I180333	TMW_6_WG091802_0001 TMW_12_WG091802_0001	Chloroform	R	A	Overall assessment of data

SDG	Sample	Compound	Flag	A or P	Reason
E2I180333	TMW_6_WG091802_0001DL TMW_12_WG091802_0001DL	All TCL compounds except Chloroform	R	A	Overall assessment of data
E2I180333	TMW_1_WG091802_0001 TMW_1_WG091802_0002 TMW_7_WG091802_0001** TMW_5_WG091802_0001**	Trichloroethene	R	A	Overall assessment of data
E2I180333	TMW_1_WG091802_0001DL TMW_1_WG091802_0002DL TMW_7_WG091802_0001DL** TMW_5_WG091802_0001DL**	All TCL compounds except Trichloroethene	R	A	Overall assessment of data
E2I180333	TMW_4_WG091802_0001	1,1-Dichloroethene Trichloroethene	R R	A	Overall assessment of data
E2I180333	TMW_4_WG091802_0001DL	All TCL compounds except 1,1-Dichloroethene Methylene chloride	R	A	Overall assessment of data

**BRC Former C-6 Torrance Harbor Gateway
Volatile - Laboratory Blank Data Qualification Summary - SDG E2I180333**

No Sample Data Qualified in this SDG

9159

TAIT ENVIRONMENTAL

Client Sample ID: EB_TAIT091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-001 Work Order #....: E8GHF1AA Matrix.....: WATER
 Date Sampled....: 09/18/02 08:15 Date Received...: 09/18/02 16:35
 Prep Date.....: 09/19/02 Analysis Date...: 09/19/02
 Prep Batch #....: 2263312 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Acetone	ND <i>uJ</i>	10	ug/L
Benzene	ND	1.0	ug/L
Bromobenzene	ND	1.0	ug/L
Bromochloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon tetrachloride	ND	0.50	ug/L
2-Butanone	ND <i>uJ</i>	5.0	ug/L
n-Butylbenzene	ND	1.0	ug/L
sec-Butylbenzene	ND	1.0	ug/L
tert-Butylbenzene	ND	1.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	0.50	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
2-Chlorotoluene	ND	1.0	ug/L
4-Chlorotoluene	ND	1.0	ug/L
1,2-Dibromo-3-chloropropane	ND	2.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
Iodomethane	ND	2.0	ug/L
Isopropyl ether	ND	2.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	0.50	ug/L
Vinyl chloride	ND	1.0	ug/L
2,2-Dichloropropane	ND <i>uJ</i>	25	ug/L
t-Butanol	ND	1.0	ug/L
1,1-Dichloropropene	ND	2.0	ug/L
Tert-amyl methyl ether	ND	2.0	ug/L
Tert-butyl ethyl ether	ND	2.0	ug/L

(Continued on next page)

W14m

A

TAIT ENVIRONMENTAL

Client Sample ID: EB_TAIT091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-001 Work Order #....: E8GHF1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethylbenzene	ND	1.0	ug/L
Hexachlorobutadiene	ND <i>UJ</i>	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Isopropylbenzene	ND	1.0	ug/L
p-Isopropyltoluene	ND	1.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Methyl tert-butyl ether	ND	1.0	ug/L
n-Propylbenzene	ND	1.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND <i>UJ</i>	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,3-Trichlorobenzene	ND	1.0	ug/L
1,2,4-Trichloro- benzene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
1,2,4-Trimethylbenzene	ND	1.0	ug/L
1,3,5-Trimethylbenzene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L
Acrolein	ND <i>R</i>	20	ug/L
Acrylonitrile	ND <i>R</i>	20	ug/L
Vinyl acetate	ND <i>UJ</i>	5.0	ug/L
Tetrahydrofuran	ND <i>UJ</i>	10	ug/L
2-Chloroethyl vinyl ether	ND <i>UJ</i>	5.0	ug/L
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS	
Bromofluorobenzene	90	(75 - 130)	
1,2-Dichloroethane-d4	130	(65 - 135)	
Toluene-d8	88	(80 - 130)	

A
W-14-72

TAIT ENVIRONMENTAL

Client Sample ID: FB_TAIT091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-002 Work Order #....: E8GHG1AA Matrix.....: WATER
 Date Sampled....: 09/18/02 08:37 Date Received...: 09/18/02 16:35
 Prep Date.....: 09/19/02 Analysis Date...: 09/19/02
 Prep Batch #....: 2263312 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	7.3 J	10	ug/L
Benzene	ND	1.0	ug/L
Bromobenzene	ND	1.0	ug/L
Bromochloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon tetrachloride	ND	0.50	ug/L
2-Butanone	ND	5.0	ug/L
n-Butylbenzene	ND	1.0	ug/L
sec-Butylbenzene	ND	1.0	ug/L
tert-Butylbenzene	ND	1.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	0.50	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
2-Chlorotoluene	ND	1.0	ug/L
4-Chlorotoluene	ND	1.0	ug/L
1,2-Dibromo-3-chloro- propane	ND	2.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
Iodomethane	ND	2.0	ug/L
Isopropyl ether	ND	2.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	0.50	ug/L
2,2-Dichloropropane	ND	1.0	ug/L
t-Butanol	ND UT	25	ug/L
1,1-Dichloropropene	ND	1.0	ug/L
Tert-amyl methyl ether	ND	2.0	ug/L
Tert-butyl ethyl ether	ND	2.0	ug/L

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A
W-14-v2

TAIT ENVIRONMENTAL

Client Sample ID: FB_TAIT091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-002 Work Order #....: E8GHG1AA Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
Ethylbenzene	ND	1.0	ug/L
Hexachlorobutadiene	ND <i>UJ</i>	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Isopropylbenzene	ND	1.0	ug/L
p-Isopropyltoluene	ND	1.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Methyl tert-butyl ether	ND	1.0	ug/L
n-Propylbenzene	ND	1.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND <i>UJ</i>	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,3-Trichlorobenzene	ND	1.0	ug/L
1,2,4-Trichloro- benzene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
1,2,4-Trimethylbenzene	ND	1.0	ug/L
1,3,5-Trimethylbenzene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L
Acrolein	ND <i>R</i>	20	ug/L
Acrylonitrile	ND <i>R</i>	20	ug/L
Vinyl acetate	ND <i>UJ</i>	5.0	ug/L
Tetrahydrofuran	ND <i>UJ</i>	10	ug/L
2-Chloroethyl vinyl ether	ND <i>UJ</i>	5.0	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Bromofluorobenzene	89	(75 - 130)
1,2-Dichloroethane-d4	133	(65 - 135)
Toluene-d8	95	(80 - 130)

NOTE (S) :

J Estimated result. Result is less than RL.

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W747R

TAIT ENVIRONMENTAL

Client Sample ID: TMW_6_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-003 Work Order #....: E8GHH1AA Matrix.....: WATER
 Date Sampled....: 09/18/02 08:50 Date Received...: 09/18/02 16:35
 Prep Date.....: 09/19/02 Analysis Date...: 09/19/02
 Prep Batch #....: 2263312 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND R	25	ug/L
Benzene	ND	2.5	ug/L
Bromobenzene	ND	2.5	ug/L
Bromoform	ND	2.5	ug/L
Bromomethane	ND	5.0	ug/L
Carbon tetrachloride	ND	1.2	ug/L
2-Butanone	ND	12	ug/L
n-Butylbenzene	ND	2.5	ug/L
sec-Butylbenzene	ND	2.5	ug/L
tert-Butylbenzene	ND	2.5	ug/L
Carbon disulfide	ND	2.5	ug/L
Chlorobenzene	ND	2.5	ug/L
Dibromochloromethane	ND	2.5	ug/L
Dichlorodifluoromethane	ND	2.5	ug/L
Bromodichloromethane	ND	2.5	ug/L
1,2-Dichloroethane	ND	1.2	ug/L
1,1-Dichloroethene	5.0	2.5	ug/L
Chloroethane	ND	5.0	ug/L
Chloroform	180 R	2.5	ug/L
Chloromethane	ND	5.0	ug/L
2-Chlorotoluene	ND	2.5	ug/L
4-Chlorotoluene	ND	2.5	ug/L
1,2-Dibromo-3-chloro- propane	ND	5.0	ug/L
1,2-Dibromoethane	ND	2.5	ug/L
Iodomethane	ND	5.0	ug/L
Isopropyl ether	ND	5.0	ug/L
1,2-Dichlorobenzene	ND	2.5	ug/L
1,3-Dichlorobenzene	ND	2.5	ug/L
1,4-Dichlorobenzene	ND	2.5	ug/L
1,1-Dichloroethane	ND	2.5	ug/L
cis-1,2-Dichloroethene	ND	2.5	ug/L
trans-1,2-Dichloroethene	ND	2.5	ug/L
Vinyl chloride	ND	1.2	ug/L
2,2-Dichloropropane	ND	2.5	ug/L
t-Butanol	ND	62	ug/L
1,1-Dichloropropene	ND	2.5	ug/L
Tert-amyl methyl ether	ND	5.0	ug/L
Tert-butyl ethyl ether	ND	5.0	ug/L

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W-14-V2

TAIT ENVIRONMENTAL

Client Sample ID: TMW_6_WG091802_0001

GC/MS Volatiles

Lot-Sample #...: E2I180333-003 Work Order #...: E8GHH1AA Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
Ethylbenzene	ND R	2.5	ug/L
Hexachlorobutadiene	ND	2.5	ug/L
2-Hexanone	ND	12	ug/L
Isopropylbenzene	ND	2.5	ug/L
p-Isopropyltoluene	ND	2.5	ug/L
Methylene chloride	ND	2.5	ug/L
4-Methyl-2-pentanone	ND	12	ug/L
Methyl tert-butyl ether	ND	2.5	ug/L
n-Propylbenzene	ND	2.5	ug/L
Styrene	ND	2.5	ug/L
1,1,1,2-Tetrachloroethane	ND	2.5	ug/L
1,1,2,2-Tetrachloroethane	ND	2.5	ug/L
Tetrachloroethene	ND	2.5	ug/L
Toluene	ND	2.5	ug/L
1,2,3-Trichlorobenzene	ND	2.5	ug/L
1,2,4-Trichloro- benzene	ND	2.5	ug/L
1,1,1-Trichloroethane	ND	2.5	ug/L
1,1,2-Trichloroethane	ND	2.5	ug/L
Trichloroethene	67	2.5	ug/L
Trichlorofluoromethane	ND	5.0	ug/L
1,2,3-Trichloropropane	ND	2.5	ug/L
1,2,4-Trimethylbenzene	ND	2.5	ug/L
1,3,5-Trimethylbenzene	ND	2.5	ug/L
Xylenes (total)	ND	2.5	ug/L
Acrolein	ND R	50	ug/L
Acrylonitrile	ND R	50	ug/L
Vinyl acetate	ND	12	ug/L
Tetrahydrofuran	ND	25	ug/L
2-Chloroethyl vinyl ether	ND	12	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Bromofluorobenzene	89	(75 - 130)
1,2-Dichloroethane-d4	127	(65 - 135)
Toluene-d8	92	(80 - 130)

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w74 in

TAIT ENVIRONMENTAL

Client Sample ID: TMW_6_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-003 Work Order #....: E8GHH2AA Matrix.....: WATER
 Date Sampled...: 09/18/02 08:50 Date Received...: 09/18/02 16:35
 Prep Date.....: 09/19/02 Analysis Date...: 09/20/02
 Prep Batch #....: 2263312 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Acetone	ND <i>WS</i>	10	ug/L
Benzene	ND	1.0	ug/L
Bromobenzene	ND	1.0	ug/L
Bromochloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon tetrachloride	ND	0.50	ug/L
2-Butanone	ND <i>WS</i>	5.0	ug/L
n-Butylbenzene	ND	1.0	ug/L
sec-Butylbenzene	ND	1.0	ug/L
tert-Butylbenzene	ND	1.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
Bromodichloromethane	0.64 J	1.0	ug/L
1,2-Dichloroethane	ND	0.50	ug/L
1,1-Dichloroethene	3.4	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	170 E R	1.0	ug/L
Chloromethane	ND	2.0	ug/L
2-Chlorotoluene	ND	1.0	ug/L
4-Chlorotoluene	ND	1.0	ug/L
1,2-Dibromo-3-chloro- propane	ND	2.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
Iodomethane	ND	2.0	ug/L
Isopropyl ether	ND	2.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	0.38 J	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	0.50	ug/L
2,2-Dichloropropane	ND	1.0	ug/L
t-Butanol	ND <i>WS</i>	25	ug/L
1,1-Dichloropropene	ND	1.0	ug/L
Tert-amyl methyl ether	ND	2.0	ug/L
Tert-butyl ethyl ether	ND	2.0	ug/L

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W7U7R

TAIT ENVIRONMENTAL

Client Sample ID: TMW_6_WG091802_0001

GC/MS Volatiles

Lot-Sample #...: E2I180333-003 Work Order #...: E8GHH2AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethylbenzene	ND	1.0	ug/L
Hexachlorobutadiene	ND UJ	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Isopropylbenzene	ND	1.0	ug/L
p-Isopropyltoluene	ND	1.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Methyl tert-butyl ether	ND	1.0	ug/L
n-Propylbenzene	ND	1.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND UJ	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,3-Trichlorobenzene	ND	1.0	ug/L
1,2,4-Trichloro- benzene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	53	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
1,2,4-Trimethylbenzene	ND	1.0	ug/L
1,3,5-Trimethylbenzene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L
Acrolein	ND R	20	ug/L
Acrylonitrile	ND R	20	ug/L
Vinyl acetate	ND UJ	5.0	ug/L
Tetrahydrofuran	ND UJ	10	ug/L
2-Chloroethyl vinyl ether	ND UJ	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	90	(75 - 130)
1,2-Dichloroethane-d4	130	(65 - 135)
Toluene-d8	90	(80 - 130)

NOTE (S) :

J Estimated result. Result is less than RL.

E Estimated result. Result concentration exceeds the calibration range.

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W/M/W

TAIT ENVIRONMENTAL

Client Sample ID: TMW_12_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-004 Work Order #....: E8GHJ1AA Matrix.....: WATER
 Date Sampled....: 09/18/02 09:35 Date Received...: 09/18/02 16:35
 Prep Date.....: 09/19/02 Analysis Date...: 09/19/02
 Prep Batch #....: 2263312 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND R	250	ug/L
Benzene	ND	25	ug/L
Bromobenzene	ND	25	ug/L
Bromochloromethane	ND	25	ug/L
Bromoform	ND	25	ug/L
Bromomethane	ND	50	ug/L
Carbon tetrachloride	ND	12	ug/L
2-Butanone	ND	120	ug/L
n-Butylbenzene	ND	25	ug/L
sec-Butylbenzene	ND	25	ug/L
tert-Butylbenzene	ND	25	ug/L
Carbon disulfide	ND	25	ug/L
Chlorobenzene	ND	25	ug/L
Dibromochloromethane	ND	25	ug/L
Dichlorodifluoromethane	ND	25	ug/L
Bromodichloromethane	ND	25	ug/L
1,2-Dichloroethane	ND	12	ug/L
1,1-Dichloroethene	20 J	25	ug/L
Chloroethane	ND	50	ug/L
Chloroform	1600	25	ug/L
Chloromethane	ND R	50	ug/L
2-Chlorotoluene	ND	25	ug/L
4-Chlorotoluene	ND	25	ug/L
1,2-Dibromo-3-chloro-propane	ND	50	ug/L
1,2-Dibromoethane	ND	25	ug/L
Iodomethane	ND	50	ug/L
Isopropyl ether	ND	50	ug/L
1,2-Dichlorobenzene	ND	25	ug/L
1,3-Dichlorobenzene	ND	25	ug/L
1,4-Dichlorobenzene	ND	25	ug/L
1,1-Dichloroethane	ND	25	ug/L
cis-1,2-Dichloroethene	ND	25	ug/L
trans-1,2-Dichloroethene	ND	25	ug/L
Vinyl chloride	ND	12	ug/L
2,2-Dichloropropane	ND	25	ug/L
t-Butanol	ND	620	ug/L
1,1-Dichloropropene	ND	25	ug/L
Tert-amyl methyl ether	ND	50	ug/L
Tert-butyl ethyl ether	ND	50	ug/L

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W74-rr

TAIT ENVIRONMENTAL

Client Sample ID: TMW_12_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-004 Work Order #....: E8GHJ1AA Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
Ethylbenzene	ND R	25	ug/L
Hexachlorobutadiene	ND	25	ug/L
2-Hexanone	ND	120	ug/L
Isopropylbenzene	ND	25	ug/L
p-Isopropyltoluene	ND	25	ug/L
Methylene chloride	ND	25	ug/L
4-Methyl-2-pentanone	ND	120	ug/L
Methyl tert-butyl ether	ND	25	ug/L
n-Propylbenzene	ND	25	ug/L
Styrene	ND	25	ug/L
1,1,1,2-Tetrachloroethane	ND	25	ug/L
1,1,2,2-Tetrachloroethane	ND	25	ug/L
Tetrachloroethene	13 J	25	ug/L
Toluene	ND	25	ug/L
1,2,3-Trichlorobenzene	ND	25	ug/L
1,2,4-Trichloro- benzene	ND	25	ug/L
1,1,1-Trichloroethane	ND	25	ug/L
1,1,2-Trichloroethane	ND	25	ug/L
Trichloroethene	140	25	ug/L
Trichlorofluoromethane	ND	50	ug/L
1,2,3-Trichloropropane	ND	25	ug/L
1,2,4-Trimethylbenzene	ND	25	ug/L
1,3,5-Trimethylbenzene	ND	25	ug/L
Xylenes (total)	ND	25	ug/L
Acrolein	ND R	500	ug/L
Acrylonitrile	ND R	500	ug/L
Vinyl acetate	ND R	120	ug/L
Tetrahydrofuran	ND	250	ug/L
2-Chloroethyl vinyl ether	ND	120	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Bromofluorobenzene	90	(75 - 130)
1,2-Dichloroethane-d4	130	(65 - 135)
Toluene-d8	90	(80 - 130)

NOTE (S) :

J Estimated result. Result is less than RL.

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W-M-DR

TAIT ENVIRONMENTAL

Client Sample ID: TMW_12_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-004 Work Order #....: E8GHJ2AA Matrix.....: WATER
 Date Sampled....: 09/18/02 09:35 Date Received...: 09/18/02 16:35
 Prep Date.....: 09/20/02 Analysis Date...: 09/20/02
 Prep Batch #....: 2263312 Method.....: SW846 8260B

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
Acetone	ND <i>UJ</i>	50	ug/L
Benzene	ND	5.0	ug/L
Bromobenzene	ND	5.0	ug/L
Bromo(chloromethane)	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	10	ug/L
Carbon tetrachloride	4.5	2.5	ug/L
2-Butanone	ND <i>UJ</i>	25	ug/L
n-Butylbenzene	ND	5.0	ug/L
sec-Butylbenzene	ND	5.0	ug/L
tert-Butylbenzene	ND	5.0	ug/L
Carbon disulfide	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Dichlorodifluoromethane	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
1,2-Dichloroethane	ND	2.5	ug/L
1,1-Dichloroethene	17	5.0	ug/L
Chloroethane	ND	10	ug/L
Chloroform	1400 E R	5.0	ug/L
Chloromethane	ND	10	ug/L
2-Chlorotoluene	ND	5.0	ug/L
4-Chlorotoluene	ND	5.0	ug/L
1,2-Dibromo-3-chloropropane	ND	10	ug/L
1,2-Dibromoethane	ND	5.0	ug/L
Iodomethane	ND	10	ug/L
Isopropyl ether	ND	10	ug/L
1,2-Dichlorobenzene	ND	5.0	ug/L
1,3-Dichlorobenzene	ND	5.0	ug/L
1,4-Dichlorobenzene	ND	5.0	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
cis-1,2-Dichloroethene	ND	5.0	ug/L
trans-1,2-Dichloroethene	ND	5.0	ug/L
Vinyl chloride	ND	2.5	ug/L
2,2-Dichloropropane	ND	5.0	ug/L
t-Butanol	ND <i>UJ</i>	120	ug/L
1,1-Dichloropropene	ND	5.0	ug/L
Tert-amyl methyl ether	ND	10	ug/L
Tert-butyl ethyl ether	ND	10	ug/L

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W-1402

TAIT ENVIRONMENTAL

Client Sample ID: TMW_12_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-004 Work Order #....: E8GHJ2AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethylbenzene	ND	5.0	ug/L
Hexachlorobutadiene	ND <i>UT</i>	5.0	ug/L
2-Hexanone	ND	25	ug/L
Isopropylbenzene	ND	5.0	ug/L
p-Isopropyltoluene	ND	5.0	ug/L
Methylene chloride	ND	5.0	ug/L
4-Methyl-2-pentanone	ND	25	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
n-Propylbenzene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
1,1,1,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND <i>UT</i>	5.0	ug/L
Tetrachloroethene	13	5.0	ug/L
Toluene	ND	5.0	ug/L
1,2,3-Trichlorobenzene	ND	5.0	ug/L
1,2,4-Trichloro- benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
Trichloroethene	120	5.0	ug/L
Trichlorofluoromethane	ND	10	ug/L
1,2,3-Trichloropropane	ND	5.0	ug/L
1,2,4-Trimethylbenzene	ND	5.0	ug/L
1,3,5-Trimethylbenzene	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L
Acrolein	ND <i>R</i>	100	ug/L
Acrylonitrile	ND <i>R</i>	100	ug/L
Vinyl acetate	ND <i>UT</i>	25	ug/L
Tetrahydrofuran	ND <i>UT</i>	50	ug/L
2-Chloroethyl vinyl ether	ND <i>UT</i>	25	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	87	(75 - 130)
1,2-Dichloroethane-d4	125	(65 - 135)
Toluene-d8	87	(80 - 130)

NOTE(S) :

E Estimated result. Result concentration exceeds the calibration range.

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W74w

TAIT ENVIRONMENTAL

Client Sample ID: TMW_1_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-005 Work Order #....: E8GHK1AA Matrix.....: WATER
 Date Sampled...: 09/18/02 10:30 Date Received...: 09/18/02 16:35
 Prep Date.....: 09/19/02 Analysis Date...: 09/19/02
 Prep Batch #....: 2263312 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING	LIMIT	UNITS
Acetone	ND R		100	ug/L
Benzene	ND		10	ug/L
Bromobenzene	ND		10	ug/L
Bromochloromethane	ND		10	ug/L
Bromoform	ND		20	ug/L
Bromomethane	ND		5.0	ug/L
Carbon tetrachloride	ND		50	ug/L
2-Butanone	ND		10	ug/L
n-Butylbenzene	ND		10	ug/L
sec-Butylbenzene	ND		10	ug/L
tert-Butylbenzene	ND		10	ug/L
Carbon disulfide	ND		10	ug/L
Chlorobenzene	ND		10	ug/L
Dibromochloromethane	ND		10	ug/L
Dichlorodifluoromethane	ND		10	ug/L
Bromodichloromethane	ND		10	ug/L
1,2-Dichloroethane	ND		5.0	ug/L
1,1-Dichloroethene	220		10	ug/L
Chloroethane	ND		20	ug/L
Chloroform	4.9 J	R	10	ug/L
Chloromethane	ND		20	ug/L
2-Chlorotoluene	ND		10	ug/L
4-Chlorotoluene	ND		10	ug/L
1,2-Dibromo-3-chloro- propane	ND		20	ug/L
1,2-Dibromoethane	ND		10	ug/L
Iodomethane	ND		20	ug/L
Isopropyl ether	ND		20	ug/L
1,2-Dichlorobenzene	ND		10	ug/L
1,3-Dichlorobenzene	ND		10	ug/L
1,4-Dichlorobenzene	ND		10	ug/L
1,1-Dichloroethane	ND		10	ug/L
cis-1,2-Dichloroethene	ND		10	ug/L
trans-1,2-Dichloroethene	ND		10	ug/L
Vinyl chloride	ND		5.0	ug/L
2,2-Dichloropropane	ND		10	ug/L
t-Butanol	ND		250	ug/L
1,1-Dichloropropene	ND		10	ug/L
Tert-amyl methyl ether	ND		20	ug/L
Tert-butyl ethyl ether	ND		20	ug/L

(Continued on next page)

A
w/Mur

TAIT ENVIRONMENTAL

Client Sample ID: TMW_1_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-005 Work Order #....: E8GHK1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethylbenzene	ND R	10	ug/L
Hexachlorobutadiene	ND	10	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	10	ug/L
p-Isopropyltoluene	ND	10	ug/L
Methylene chloride	ND	10	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	10	ug/L
n-Propylbenzene	ND	10	ug/L
Styrene	ND	10	ug/L
1,1,1,2-Tetrachloroethane	ND	10	ug/L
1,1,2,2-Tetrachloroethane	ND	10	ug/L
Tetrachloroethene	3.6 J	10	ug/L
Toluene	ND R	10	ug/L
1,2,3-Trichlorobenzene	ND	10	ug/L
1,2,4-Trichloro- benzene	ND	10	ug/L
1,1,1-Trichloroethane	ND	10	ug/L
1,1,2-Trichloroethane	ND	10	ug/L
Trichloroethene	540	10	ug/L
Trichlorofluoromethane	31	20	ug/L
1,2,3-Trichloropropane	ND	10	ug/L
1,2,4-Trimethylbenzene	ND	10	ug/L
1,3,5-Trimethylbenzene	ND	10	ug/L
Xylenes (total)	ND	10	ug/L
Acrolein	ND R	200	ug/L
Acrylonitrile	ND R	200	ug/L
Vinyl acetate	ND	50	ug/L
Tetrahydrofuran	ND	100	ug/L
2-Chloroethyl vinyl ether	ND	50	ug/L
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS	
Bromofluorobenzene	90	(75 - 130)	
1,2-Dichloroethane-d4	130	(65 - 135)	
Toluene-d8	91	(80 - 130)	

NOTE(S) :

J Estimated result. Result is less than RL.

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w-34mz

TAIT ENVIRONMENTAL

Client Sample ID: TMW_1_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-005 Work Order #....: E8GHK2AA Matrix.....: WATER
 Date Sampled...: 09/18/02 10:30 Date Received..: 09/18/02 16:35
 Prep Date.....: 09/20/02 Analysis Date...: 09/20/02
 Prep Batch #....: 2263312 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND <i>uJ</i>	2.0	ug/L
Benzene	ND	2.0	ug/L
Bromobenzene	ND	2.0	ug/L
Bromoform	ND	2.0	ug/L
Bromomethane	ND	4.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
2-Butanone	ND	10	ug/L
n-Butylbenzene	ND	2.0	ug/L
sec-Butylbenzene	ND	2.0	ug/L
tert-Butylbenzene	ND	2.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	2.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
Bromodichloromethane	0.83 J	2.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	170	2.0	ug/L
Chloroethane	ND	4.0	ug/L
Chloroform	4.2	2.0	ug/L
Chloromethane	ND	4.0	ug/L
2-Chlorotoluene	ND	2.0	ug/L
4-Chlorotoluene	ND	2.0	ug/L
1,2-Dibromo-3-chloro- propane	ND	4.0	ug/L
1,2-Dibromoethane	ND	2.0	ug/L
Iodomethane	ND	4.0	ug/L
Isopropyl ether	ND	4.0	ug/L
1,2-Dichlorobenzene	ND	2.0	ug/L
1,3-Dichlorobenzene	ND	2.0	ug/L
1,4-Dichlorobenzene	ND	2.0	ug/L
1,1-Dichloroethane	ND	2.0	ug/L
cis-1,2-Dichloroethene	ND	2.0	ug/L
trans-1,2-Dichloroethene	ND	2.0	ug/L
Vinyl chloride	ND	1.0	ug/L
2,2-Dichloropropane	ND <i>uJ</i>	50	ug/L
t-Butanol	ND	2.0	ug/L
1,1-Dichloropropene	ND	4.0	ug/L
Tert-amyl methyl ether	ND	4.0	ug/L
Tert-butyl ethyl ether	ND	4.0	ug/L

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WTWR*

TAIT ENVIRONMENTAL

Client Sample ID: TMW_1_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-005 Work Order #....: E8GHK2AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethylbenzene	ND	2.0	ug/L
Hexachlorobutadiene	ND <i>UT</i>	2.0	ug/L
2-Hexanone	ND	10	ug/L
Isopropylbenzene	ND	2.0	ug/L
p-Isopropyltoluene	ND	2.0	ug/L
Methylene chloride	ND	2.0	ug/L
4-Methyl-2-pentanone	ND	10	ug/L
Methyl tert-butyl ether	ND	2.0	ug/L
n-Propylbenzene	ND	2.0	ug/L
Styrene	ND	2.0	ug/L
1,1,1,2-Tetrachloroethane	ND	2.0	ug/L
1,1,2,2-Tetrachloroethane	ND <i>UT</i>	2.0	ug/L
Tetrachloroethene	3.0	2.0	ug/L
Toluene	ND	2.0	ug/L
1,2,3-Trichlorobenzene	ND	2.0	ug/L
1,2,4-Trichloro- benzene	ND	2.0	ug/L
1,1,1-Trichloroethane	ND	2.0	ug/L
1,1,2-Trichloroethane	ND	2.0	ug/L
Trichloroethene	400 E <i>R</i>	2.0	ug/L
Trichlorofluoromethane	22	4.0	ug/L
1,2,3-Trichloropropane	ND	2.0	ug/L
1,2,4-Trimethylbenzene	ND	2.0	ug/L
1,3,5-Trimethylbenzene	ND	2.0	ug/L
Xylenes (total)	ND	2.0	ug/L
Acrolein	ND <i>R</i>	40	ug/L
Acrylonitrile	ND <i>R</i>	40	ug/L
Vinyl acetate	ND <i>UT</i>	10	ug/L
Tetrahydrofuran	ND <i>UT</i>	20	ug/L
2-Chloroethyl vinyl ether	ND <i>UT</i>	10	ug/L
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS	
Bromofluorobenzene	94	(75 - 130)	
1,2-Dichloroethane-d4	139 *, I	(65 - 135)	
Toluene-d8	94	(80 - 130)	

NOTE (S) :

- * Surrogate recovery is outside stated control limits.
- I Matrix interference.
- J Estimated result. Result is less than RL.
- E Estimated result. Result concentration exceeds the calibration range.

A
W740n

TAIT ENVIRONMENTAL

Client Sample ID: TMW_1_WG091802_0002

GC/MS Volatiles

Lot-Sample #....: E2I180333-006 Work Order #....: E8GHL1AA Matrix.....: WATER
 Date Sampled....: 09/18/02 10:30 Date Received...: 09/18/02 16:35
 Prep Date.....: 09/19/02 Analysis Date...: 09/19/02
 Prep Batch #....: 2263312 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	100	ug/L
Benzene	ND	10	ug/L
Bromobenzene	ND	10	ug/L
Bromochloromethane	ND	10	ug/L
Bromoform	ND	10	ug/L
Bromomethane	ND	20	ug/L
Carbon tetrachloride	ND	5.0	ug/L
2-Butanone	ND	50	ug/L
n-Butylbenzene	ND	10	ug/L
sec-Butylbenzene	ND	10	ug/L
tert-Butylbenzene	ND	10	ug/L
Carbon disulfide	ND	10	ug/L
Chlorobenzene	ND	10	ug/L
Dibromochloromethane	ND	10	ug/L
Dichlorodifluoromethane	ND	10	ug/L
Bromodichloromethane	ND	10	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	210	10	ug/L
Chloroethane	ND	20	ug/L
Chloroform	3.6 J	10	ug/L
Chloromethane	ND	20	ug/L
2-Chlorotoluene	ND	10	ug/L
4-Chlorotoluene	ND	10	ug/L
1,2-Dibromo-3-chloro-propane	ND	20	ug/L
1,2-Dibromoethane	ND	10	ug/L
Iodomethane	ND	20	ug/L
Isopropyl ether	ND	20	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
1,1-Dichloroethane	ND	10	ug/L
cis-1,2-Dichloroethene	ND	10	ug/L
trans-1,2-Dichloroethene	ND	10	ug/L
Vinyl chloride	ND	5.0	ug/L
2,2-Dichloropropane	ND	10	ug/L
t-Butanol	ND	250	ug/L
1,1-Dichloropropene	ND	10	ug/L
Tert-amyl methyl ether	ND	20	ug/L
Tert-butyl ethyl ether	ND	20	ug/L

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n7402

TAIT ENVIRONMENTAL

Client Sample ID: TMW_1_WG091802_0002

GC/MS Volatiles

Lot-Sample #....: E2I180333-006 Work Order #....: E8GHL1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethylbenzene	ND R	10	ug/L
Hexachlorobutadiene	ND	10	ug/L
2-Hexanone	ND	50	ug/L
Isopropylbenzene	ND	10	ug/L
p-Isopropyltoluene	ND	10	ug/L
Methylene chloride	ND	10	ug/L
4-Methyl-2-pentanone	ND	50	ug/L
Methyl tert-butyl ether	ND	10	ug/L
n-Propylbenzene	ND	10	ug/L
Styrene	ND	10	ug/L
1,1,1,2-Tetrachloroethane	ND	10	ug/L
1,1,2,2-Tetrachloroethane	ND	10	ug/L
Tetrachloroethene	3.4 J	10	ug/L
Toluene	ND	10	ug/L
1,2,3-Trichlorobenzene	ND	10	ug/L
1,2,4-Trichloro- benzene	ND	10	ug/L
1,1,1-Trichloroethane	ND	10	ug/L
1,1,2-Trichloroethane	ND	10	ug/L
Trichloroethene	520	10	ug/L
Trichlorofluoromethane	30 R	20	ug/L
1,2,3-Trichloropropane	ND	10	ug/L
1,2,4-Trimethylbenzene	ND	10	ug/L
1,3,5-Trimethylbenzene	ND	10	ug/L
Xylenes (total)	ND	10	ug/L
Acrolein	ND R	200	ug/L
Acrylonitrile	ND R	200	ug/L
Vinyl acetate	ND	50	ug/L
Tetrahydrofuran	ND	100	ug/L
2-Chloroethyl vinyl ether	ND	50	ug/L
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS	
Bromofluorobenzene	87	(75 - 130)	
1,2-Dichloroethane-d4	132	(65 - 135)	
Toluene-d8	91	(80 - 130)	

NOTE(S) :

J Estimated result. Result is less than RL.

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WWR

TAIT ENVIRONMENTAL

Client Sample ID: TMW_1_WG091802_0002

GC/MS Volatiles

Lot-Sample #....: E2I180333-006 Work Order #....: E8GHL2AA Matrix.....: WATER
 Date Sampled...: 09/18/02 10:30 Date Received...: 09/18/02 16:35
 Prep Date.....: 09/20/02 Analysis Date...: 09/20/02
 Prep Batch #....: 2263312 Method.....: SW846 8260B

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
Acetone	ND <i>UJ</i>	20	ug/L
Benzene	ND	2.0	ug/L
Bromobenzene	ND	2.0	ug/L
Bromochloromethane	ND	2.0	ug/L
Bromoform	ND	2.0	ug/L
Bromomethane	ND	4.0	ug/L
Carbon tetrachloride	ND	1.0	ug/L
2-Butanone	ND <i>UJ</i>	10	ug/L
n-Butylbenzene	ND	2.0	ug/L
sec-Butylbenzene	ND	2.0	ug/L
tert-Butylbenzene	ND	2.0	ug/L
Carbon disulfide	ND	2.0	ug/L
Chlorobenzene	ND	2.0	ug/L
Dibromochloromethane	ND	2.0	ug/L
Dichlorodifluoromethane	ND	2.0	ug/L
Bromodichloromethane	0.82 <i>J</i>	2.0	ug/L
1,2-Dichloroethane	ND	1.0	ug/L
1,1-Dichloroethene	190	2.0	ug/L
Chloroethane	ND	4.0	ug/L
Chloroform	3.6	2.0	ug/L
Chloromethane	ND	4.0	ug/L
2-Chlorotoluene	ND	2.0	ug/L
4-Chlorotoluene	ND	2.0	ug/L
1,2-Dibromo-3-chloro- propane	ND	4.0	ug/L
1,2-Dibromoethane	ND	2.0	ug/L
Iodomethane	ND	4.0	ug/L
Isopropyl ether	ND	4.0	ug/L
1,2-Dichlorobenzene	ND	2.0	ug/L
1,3-Dichlorobenzene	ND	2.0	ug/L
1,4-Dichlorobenzene	ND	2.0	ug/L
1,1-Dichloroethane	ND	2.0	ug/L
cis-1,2-Dichloroethene	ND	2.0	ug/L
trans-1,2-Dichloroethene	ND	2.0	ug/L
Vinyl chloride	ND	1.0	ug/L
2,2-Dichloropropane	ND	2.0	ug/L
t-Butanol	ND	50	ug/L
1,1-Dichloropropene	ND	2.0	ug/L
Tert-amyl methyl ether	ND	4.0	ug/L
Tert-butyl ethyl ether	ND	4.0	ug/L

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*A
W-1402*

TAIT ENVIRONMENTAL

Client Sample ID: TMW_1_WG091802_0002

GC/MS Volatiles

Lot-Sample #....: E2I180333-006 Work Order #....: E8GHL2AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethylbenzene	ND	2.0	ug/L
Hexachlorobutadiene	ND <i>uj</i>	2.0	ug/L
2-Hexanone	ND	10	ug/L
Isopropylbenzene	ND	2.0	ug/L
p-Isopropyltoluene	ND	2.0	ug/L
Methylene chloride	ND	2.0	ug/L
4-Methyl-2-pentanone	ND	10	ug/L
Methyl tert-butyl ether	ND	2.0	ug/L
n-Propylbenzene	ND	2.0	ug/L
Styrene	ND	2.0	ug/L
1,1,1,2-Tetrachloroethane	ND	2.0	ug/L
1,1,2,2-Tetrachloroethane	ND <i>uj</i>	2.0	ug/L
Tetrachloroethene	3.4	2.0	ug/L
Toluene	ND	2.0	ug/L
1,2,3-Trichlorobenzene	ND	2.0	ug/L
1,2,4-Trichloro- benzene	ND	2.0	ug/L
1,1,1-Trichloroethane	ND	2.0	ug/L
1,1,2-Trichloroethane	ND	2.0	ug/L
Trichloroethene	440 E <i>R</i>	2.0	ug/L
Trichlorofluoromethane	25	4.0	ug/L
1,2,3-Trichloropropane	ND	2.0	ug/L
1,2,4-Trimethylbenzene	ND	2.0	ug/L
1,3,5-Trimethylbenzene	ND	2.0	ug/L
Xylenes (total)	ND	2.0	ug/L
Acrolein	ND <i>R</i>	40	ug/L
Acrylonitrile	ND <i>R</i>	40	ug/L
Vinyl acetate	ND <i>uj</i>	10	ug/L
Tetrahydrofuran	ND <i>T</i>	20	ug/L
2-Chloroethyl vinyl ether	ND <i>J</i>	10	ug/L
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS	
Bromofluorobenzene	89	(75 - 130)	
1,2-Dichloroethane-d4	131	(65 - 135)	
Toluene-d8	88	(80 - 130)	

NOTE(S) :

J Estimated result. Result is less than RL.

E Estimated result. Result concentration exceeds the calibration range.

*A
W/Mor*

TAIT ENVIRONMENTAL

Client Sample ID: TMW_4_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-007 Work Order #....: E8GHM1AA Matrix.....: WATER
 Date Sampled....: 09/18/02 11:20 Date Received...: 09/18/02 16:35
 Prep Date.....: 09/19/02 Analysis Date...: 09/19/02
 Prep Batch #....: 2263312 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	250	ug/L
Benzene	ND	25	ug/L
Bromobenzene	ND	25	ug/L
Bromochloromethane	ND	25	ug/L
Bromoform	ND	25	ug/L
Bromomethane	ND	50	ug/L
Carbon tetrachloride	ND	12	ug/L
2-Butanone	ND	120	ug/L
n-Butylbenzene	ND	25	ug/L
sec-Butylbenzene	ND	25	ug/L
tert-Butylbenzene	ND	25	ug/L
Carbon disulfide	ND	25	ug/L
Chlorobenzene	ND	25	ug/L
Dibromochloromethane	ND	25	ug/L
Dichlorodifluoromethane	ND	25	ug/L
Bromodichloromethane	ND	25	ug/L
1,2-Dichloroethane	ND	12	ug/L
1,1-Dichloroethene	660	25	ug/L
Chloroethane	ND	50	ug/L
Chloroform	13 J	25	ug/L
Chloromethane	ND	50	ug/L
2-Chlorotoluene	ND	25	ug/L
4-Chlorotoluene	ND	25	ug/L
1,2-Dibromo-3-chloro-propane	ND	50	ug/L
1,2-Dibromoethane	ND	25	ug/L
Iodomethane	ND	50	ug/L
Isopropyl ether	ND	50	ug/L
1,2-Dichlorobenzene	ND	25	ug/L
1,3-Dichlorobenzene	ND	25	ug/L
1,4-Dichlorobenzene	ND	25	ug/L
1,1-Dichloroethane	14 J	25	ug/L
cis-1,2-Dichloroethene	21 J	25	ug/L
trans-1,2-Dichloroethene	15 J	25	ug/L
Vinyl chloride	ND	12	ug/L
2,2-Dichloropropane	ND	25	ug/L
t-Butanol	ND	620	ug/L
1,1-Dichloropropene	ND	25	ug/L
Tert-amyl methyl ether	ND	50	ug/L
Tert-butyl ethyl ether	ND	50	ug/L

(Continued on next page)

A
W-1402

TAIT ENVIRONMENTAL

Client Sample ID: TMW_4_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-007 Work Order #....: E8GHM1AA Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
Ethylbenzene	ND R	25	ug/L
Hexachlorobutadiene	ND	25	ug/L
2-Hexanone	ND	120	ug/L
Isopropylbenzene	ND	25	ug/L
p-Isopropyltoluene	ND	25	ug/L
Methylene chloride	ND	25	ug/L
4-Methyl-2-pentanone	ND	120	ug/L
Methyl tert-butyl ether	ND	25	ug/L
n-Propylbenzene	ND	25	ug/L
Styrene	ND	25	ug/L
1,1,1,2-Tetrachloroethane	ND	25	ug/L
1,1,2,2-Tetrachloroethane	ND	25	ug/L
Tetrachloroethene	ND	25	ug/L
Toluene	ND	25	ug/L
1,2,3-Trichlorobenzene	ND	25	ug/L
1,2,4-Trichloro- benzene	ND	25	ug/L
1,1,1-Trichloroethane	ND	25	ug/L
1,1,2-Trichloroethane	ND	25	ug/L
Trichloroethene	1700	25	ug/L
Trichlorofluoromethane	ND	50	ug/L
1,2,3-Trichloropropane	ND	25	ug/L
1,2,4-Trimethylbenzene	ND	25	ug/L
1,3,5-Trimethylbenzene	ND	25	ug/L
Xylenes (total)	ND	25	ug/L
Acrolein	ND R	500	ug/L
Acrylonitrile	ND R	500	ug/L
Vinyl acetate	ND	120	ug/L
Tetrahydrofuran	ND	250	ug/L
2-Chloroethyl vinyl ether	ND	120	ug/L

<u>SURROGATE</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>
Bromofluorobenzene	93	(75 - 130)
1,2-Dichloroethane-d4	132	(65 - 135)
Toluene-d8	94	(80 - 130)

NOTE(S) :

J Estimated result. Result is less than RL.

A
6/14/00

TAIT ENVIRONMENTAL

Client Sample ID: TMW_4_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-007 Work Order #....: E8GHM2AA Matrix.....: WATER
 Date Sampled....: 09/18/02 11:20 Date Received...: 09/18/02 16:35
 Prep Date.....: 09/20/02 Analysis Date...: 09/20/02
 Prep Batch #....: 2263312 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Acetone	ND <i>WT</i>	50	ug/L
Benzene	ND	5.0	ug/L
Bromobenzene	ND	5.0	ug/L
Bromochloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	10	ug/L
Carbon tetrachloride	ND	2.5	ug/L
2-Butanone	ND <i>WT</i>	25	ug/L
n-Butylbenzene	ND	5.0	ug/L
sec-Butylbenzene	ND	5.0	ug/L
tert-Butylbenzene	ND	5.0	ug/L
Carbon disulfide	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Dichlorodifluoromethane	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
1,2-Dichloroethane	7.6	2.5	ug/L
1,1-Dichloroethene	560 E <i>R</i>	5.0	ug/L
Chloroethane	ND	10	ug/L
Chloroform	11	5.0	ug/L
Chloromethane	ND	10	ug/L
2-Chlorotoluene	ND	5.0	ug/L
4-Chlorotoluene	ND	5.0	ug/L
1,2-Dibromo-3-chloro-propane	ND	10	ug/L
1,2-Dibromoethane	ND	5.0	ug/L
Iodomethane	ND	10	ug/L
Isopropyl ether	ND	10	ug/L
1,2-Dichlorobenzene	ND	5.0	ug/L
1,3-Dichlorobenzene	ND	5.0	ug/L
1,4-Dichlorobenzene	ND	5.0	ug/L
1,1-Dichloroethane	12	5.0	ug/L
cis-1,2-Dichloroethene	18	5.0	ug/L
trans-1,2-Dichloroethene	13	5.0	ug/L
Vinyl chloride	ND	2.5	ug/L
2,2-Dichloropropane	ND	5.0	ug/L
t-Butanol	ND <i>WT</i>	120	ug/L
1,1-Dichloropropene	ND	5.0	ug/L
Tert-amyl methyl ether	ND	10	ug/L
Tert-butyl ethyl ether	ND	10	ug/L

(Continued on next page)

*A
W7402*

TAIT ENVIRONMENTAL

Client Sample ID: TMW_4_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-007 Work Order #....: E8GHM2AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethylbenzene	ND	5.0	ug/L
Hexachlorobutadiene	ND <i>UT</i>	5.0	ug/L
2-Hexanone	ND	25	ug/L
Isopropylbenzene	ND	5.0	ug/L
p-Isopropyltoluene	ND	5.0	ug/L
Methylene chloride	ND	5.0	ug/L
4-Methyl-2-pentanone	ND	25	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
n-Propylbenzene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
1,1,1,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND <i>UT</i>	5.0	ug/L
Tetrachloroethene	ND	5.0	ug/L
Toluene	ND	5.0	ug/L
1,2,3-Trichlorobenzene	ND	5.0	ug/L
1,2,4-Trichloro- benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	<i>4.4 J</i>	5.0	ug/L
Trichloroethene	<i>1300 E R</i>	5.0	ug/L
Trichlorofluoromethane	ND	10	ug/L
1,2,3-Trichloropropane	ND	5.0	ug/L
1,2,4-Trimethylbenzene	ND	5.0	ug/L
1,3,5-Trimethylbenzene	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L
Acrolein	ND <i>R</i>	100	ug/L
Acrylonitrile	ND <i>R</i>	100	ug/L
Vinyl acetate	ND <i>UT</i>	25	ug/L
Tetrahydrofuran	ND	50	ug/L
2-Chloroethyl vinyl ether	ND	25	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	87	(75 - 130)
1,2-Dichloroethane-d4	135	(65 - 135)
Toluene-d8	89	(80 - 130)

NOTE (S) :

E Estimated result. Result concentration exceeds the calibration range.

J Estimated result. Result is less than RL.

A
10-14 UV

TAIT ENVIRONMENTAL

Client Sample ID: TMW_7_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-008 Work Order #....: E8GHN1AA Matrix.....: WATER
 Date Sampled....: 09/18/02 12:05 Date Received...: 09/18/02 16:35
 Prep Date.....: 09/19/02 Analysis Date...: 09/19/02
 Prep Batch #....: 2263312 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING	LIMIT	UNITS
Acetone	ND R		250	ug/L
Benzene	ND		25	ug/L
Bromobenzene	ND		25	ug/L
Bromo(chloromethane)	ND		25	ug/L
Bromoform	ND		25	ug/L
Bromomethane	ND		50	ug/L
Carbon tetrachloride	ND		12	ug/L
2-Butanone	ND		120	ug/L
n-Butylbenzene	ND		25	ug/L
sec-Butylbenzene	ND		25	ug/L
tert-Butylbenzene	ND		25	ug/L
Carbon disulfide	ND		25	ug/L
Chlorobenzene	ND		25	ug/L
Dibromo(chloromethane)	ND		25	ug/L
Dichlorodifluoromethane	ND		25	ug/L
Bromodichloromethane	ND		25	ug/L
1,2-Dichloroethane	ND		12	ug/L
1,1-Dichloroethene	470		25	ug/L
Chloroethane	ND		50	ug/L
Chloroform	ND		25	ug/L
Chloromethane	ND		50	ug/L
2-Chlorotoluene	ND		25	ug/L
4-Chlorotoluene	ND		25	ug/L
1,2-Dibromo-3-chloro-propane	ND		50	ug/L
1,2-Dibromoethane	ND		25	ug/L
Iodomethane	ND		50	ug/L
Isopropyl ether	ND		50	ug/L
1,2-Dichlorobenzene	ND		25	ug/L
1,3-Dichlorobenzene	ND		25	ug/L
1,4-Dichlorobenzene	ND		25	ug/L
1,1-Dichloroethane	8.8 J		25	ug/L
cis-1,2-Dichloroethene	13 J		25	ug/L
trans-1,2-Dichloroethene	10 J		25	ug/L
Vinyl chloride	ND		12	ug/L
2,2-Dichloropropane	ND		25	ug/L
t-Butanol	ND		620	ug/L
1,1-Dichloropropene	ND		25	ug/L
Tert-amyl methyl ether	ND		50	ug/L
Tert-butyl ethyl ether	ND		50	ug/L

(Continued on next page)

A
W-7452

TAIT ENVIRONMENTAL

Client Sample ID: TMW_7_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-008 Work Order #....: E8GHN1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethylbenzene	ND <i>R</i>	25	ug/L
Hexachlorobutadiene	ND	25	ug/L
2-Hexanone	ND	120	ug/L
Isopropylbenzene	ND	25	ug/L
p-Isopropyltoluene	ND	25	ug/L
Methylene chloride	ND	25	ug/L
4-Methyl-2-pentanone	ND	120	ug/L
Methyl tert-butyl ether	ND	25	ug/L
n-Propylbenzene	ND	25	ug/L
Styrene	ND	25	ug/L
1,1,1,2-Tetrachloroethane	ND	25	ug/L
1,1,2,2-Tetrachloroethane	ND	25	ug/L
Tetrachloroethene	ND	25	ug/L
Toluene	ND	25	ug/L
1,2,3-Trichlorobenzene	ND	25	ug/L
1,2,4-Trichloro- benzene	ND	25	ug/L
1,1,1-Trichloroethane	ND	25	ug/L
1,1,2-Trichloroethane	ND	25	ug/L
Trichloroethene	1900	25	ug/L
Trichlorofluoromethane	ND <i>R</i>	50	ug/L
1,2,3-Trichloropropane	ND	25	ug/L
1,2,4-Trimethylbenzene	ND	25	ug/L
1,3,5-Trimethylbenzene	ND	25	ug/L
Xylenes (total)	ND	25	ug/L
Acrolein	ND <i>R</i>	500	ug/L
Acrylonitrile	ND <i>R</i>	500	ug/L
Vinyl acetate	ND	120	ug/L
Tetrahydrofuran	ND	250	ug/L
2-Chloroethyl vinyl ether	ND	120	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	89	(75 - 130)
1,2-Dichloroethane-d4	130	(65 - 135)
Toluene-d8	90	(80 - 130)

NOTE(S) :

J Estimated result. Result is less than RL.

AS
10 Myr

TAIT ENVIRONMENTAL

Client Sample ID: TMW_7_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-008 Work Order #....: E8GHN2AA Matrix.....: WATER
 Date Sampled....: 09/18/02 12:05 Date Received...: 09/18/02 16:35
 Prep Date.....: 09/20/02 Analysis Date...: 09/20/02
 Prep Batch #....: 2263312 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND <i>WT</i>	50	ug/L
Benzene	ND	5.0	ug/L
Bromobenzene	ND	5.0	ug/L
Bromochloromethane	ND	5.0	ug/L
Bromoform	ND	5.0	ug/L
Bromomethane	ND	10	ug/L
Carbon tetrachloride	ND	2.5	ug/L
2-Butanone	ND <i>WT</i>	25	ug/L
n-Butylbenzene	ND	5.0	ug/L
sec-Butylbenzene	ND	5.0	ug/L
tert-Butylbenzene	ND	5.0	ug/L
Carbon disulfide	ND	5.0	ug/L
Chlorobenzene	ND	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Dichlorodifluoromethane	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
1,2-Dichloroethane	4.6	2.5	ug/L
1,1-Dichloroethene	390	5.0	ug/L
Chloroethane	ND	10	ug/L
Chloroform	4.0 <i>J</i>	5.0	ug/L
Chloromethane	ND	10	ug/L
2-Chlorotoluene	ND	5.0	ug/L
4-Chlorotoluene	ND	5.0	ug/L
1,2-Dibromo-3-chloro- propane	ND	10	ug/L
1,2-Dibromoethane	ND	5.0	ug/L
Iodomethane	ND	10	ug/L
Isopropyl ether	ND	10	ug/L
1,2-Dichlorobenzene	ND	5.0	ug/L
1,3-Dichlorobenzene	ND	5.0	ug/L
1,4-Dichlorobenzene	ND	5.0	ug/L
1,1-Dichloroethane	7.7	5.0	ug/L
cis-1,2-Dichloroethene	12	5.0	ug/L
trans-1,2-Dichloroethene	8.5	5.0	ug/L
Vinyl chloride	ND	2.5	ug/L
2,2-Dichloropropane	ND	5.0	ug/L
t-Butanol	ND <i>WT</i>	120	ug/L
1,1-Dichloropropene	ND	5.0	ug/L
Tert-amyl methyl ether	ND	10	ug/L
Tert-butyl ethyl ether	ND	10	ug/L

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*AS
10/14/02*

TAIT ENVIRONMENTAL

Client Sample ID: TMW_7_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-008 Work Order #....: E8GHN2AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethylbenzene	ND	5.0	ug/L
Hexachlorobutadiene	ND <i>UJ</i>	5.0	ug/L
2-Hexanone	ND	25	ug/L
Isopropylbenzene	ND	5.0	ug/L
p-Isopropyltoluene	ND	5.0	ug/L
Methylene chloride	ND	5.0	ug/L
4-Methyl-2-pentanone	ND	25	ug/L
Methyl tert-butyl ether	ND	5.0	ug/L
n-Propylbenzene	ND	5.0	ug/L
Styrene	ND	5.0	ug/L
1,1,1,2-Tetrachloroethane	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND <i>UJ</i>	5.0	ug/L
Tetrachloroethene	ND	5.0	ug/L
Toluene	ND	5.0	ug/L
1,2,3-Trichlorobenzene	ND	5.0	ug/L
1,2,4-Trichloro- benzene	ND	5.0	ug/L
1,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	2.6 J	5.0	ug/L
Trichloroethene	1400 E <i>R</i>	5.0	ug/L
Trichlorofluoromethane	ND	10	ug/L
1,2,3-Trichloropropane	ND	5.0	ug/L
1,2,4-Trimethylbenzene	ND	5.0	ug/L
1,3,5-Trimethylbenzene	ND	5.0	ug/L
Xylenes (total)	ND	5.0	ug/L
Acrolein	ND <i>R</i>	100	ug/L
Acrylonitrile	ND <i>R</i>	100	ug/L
Vinyl acetate	ND <i>UJ</i>	25	ug/L
Tetrahydrofuran	ND <i>↓</i>	50	ug/L
2-Chloroethyl vinyl ether	ND <i>↓</i>	25	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	85	(75 - 130)
1,2-Dichloroethane-d4	131	(65 - 135)
Toluene-d8	90	(80 - 130)

NOTE(S) :

J Estimated result. Result is less than RL.

E Estimated result. Result concentration exceeds the calibration range.

*A
10/14/02*

TAIT ENVIRONMENTAL

Client Sample ID: TMW_5_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-009 Work Order #....: E8GHP1AA Matrix.....: WATER
 Date Sampled...: 09/18/02 13:10 Date Received..: 09/18/02 16:35
 Prep Date.....: 09/20/02 Analysis Date...: 09/20/02
 Prep Batch #....: 2263312 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	1200	ug/L
Benzene	ND	120	ug/L
Bromobenzene	ND	120	ug/L
Bromochloromethane	ND	120	ug/L
Bromoform	ND	120	ug/L
Bromomethane	ND	250	ug/L
Carbon tetrachloride	ND	62	ug/L
2-Butanone	ND	620	ug/L
n-Butylbenzene	ND	120	ug/L
sec-Butylbenzene	ND	120	ug/L
tert-Butylbenzene	ND	120	ug/L
Carbon disulfide	ND	120	ug/L
Chlorobenzene	ND	120	ug/L
Dibromochloromethane	ND	120	ug/L
Dichlorodifluoromethane	ND	120	ug/L
Bromodichloromethane	ND	120	ug/L
1,2-Dichloroethane	ND	62	ug/L
1,1-Dichloroethene	760	120	ug/L
Chloroethane	ND	250	ug/L
Chloroform	ND	120	ug/L
Chloromethane	ND	250	ug/L
2-Chlorotoluene	ND	120	ug/L
4-Chlorotoluene	ND	120	ug/L
1,2-Dibromo-3-chloro-	ND	250	ug/L
propane			
1,2-Dibromoethane	ND	120	ug/L
Iodomethane	ND	250	ug/L
Isopropyl ether	ND	250	ug/L
1,2-Dichlorobenzene	ND	120	ug/L
1,3-Dichlorobenzene	ND	120	ug/L
1,4-Dichlorobenzene	ND	120	ug/L
1,1-Dichloroethane	ND	120	ug/L
cis-1,2-Dichloroethene	ND	120	ug/L
trans-1,2-Dichloroethene	ND	120	ug/L
Vinyl chloride	ND	62	ug/L
2,2-Dichloropropane	ND	120	ug/L
t-Butanol	ND	3100	ug/L
1,1-Dichloropropene	ND	120	ug/L
Tert-amyl methyl ether	ND	250	ug/L
Tert-butyl ethyl ether	ND	250	ug/L

(Continued on next page)

A
W-1452

TAIT ENVIRONMENTAL

Client Sample ID: TMW_5_WG091802_0001

GC/MS Volatiles

Lot-Sample #...: E2I180333-009 Work Order #...: E8GHP1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethylbenzene	ND R	120	ug/L
Hexachlorobutadiene	ND	120	ug/L
2-Hexanone	ND	620	ug/L
Isopropylbenzene	ND	120	ug/L
p-Isopropyltoluene	ND	120	ug/L
Methylene chloride	ND	120	ug/L
4-Methyl-2-pentanone	ND	620	ug/L
Methyl tert-butyl ether	ND	120	ug/L
n-Propylbenzene	ND	120	ug/L
Styrene	ND	120	ug/L
1,1,1,2-Tetrachloroethane	ND	120	ug/L
1,1,2,2-Tetrachloroethane	ND	120	ug/L
Tetrachloroethene	ND	120	ug/L
Toluene	ND	120	ug/L
1,2,3-Trichlorobenzene	ND	120	ug/L
1,2,4-Trichloro- benzene	ND	120	ug/L
1,1,1-Trichloroethane	ND	120	ug/L
1,1,2-Trichloroethane	ND	120	ug/L
Trichloroethene	8800	120	ug/L
Trichlorofluoromethane	ND R	250	ug/L
1,2,3-Trichloropropane	ND	120	ug/L
1,2,4-Trimethylbenzene	ND	120	ug/L
1,3,5-Trimethylbenzene	ND	120	ug/L
Xylenes (total)	ND	120	ug/L
Acrolein	ND R	2500	ug/L
Acrylonitrile	ND R	2500	ug/L
Vinyl acetate	ND	620	ug/L
Tetrahydrofuran	ND	1200	ug/L
2-Chloroethyl vinyl ether	ND	620	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	86	(75 - 130)
1,2-Dichloroethane-d4	130	(65 - 135)
Toluene-d8	90	(80 - 130)

AS
10-14-12

TAIT ENVIRONMENTAL

Client Sample ID: TMW_5_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-009 Work Order #....: E8GHP2AA Matrix.....: WATER
 Date Sampled....: 09/18/02 13:10 Date Received...: 09/18/02 16:35
 Prep Date.....: 09/20/02 Analysis Date...: 09/20/02
 Prep Batch #....: 2263312 Method.....: SW846 8260B

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>
Acetone	ND uJ	250	ug/L
Benzene	ND	25	ug/L
Bromobenzene	ND	25	ug/L
Bromochloromethane	ND	25	ug/L
Bromoform	ND	25	ug/L
Bromomethane	ND	50	ug/L
Carbon tetrachloride	ND	12	ug/L
2-Butanone	ND uJ	120	ug/L
n-Butylbenzene	ND	25	ug/L
sec-Butylbenzene	ND	25	ug/L
tert-Butylbenzene	ND	25	ug/L
Carbon disulfide	ND	25	ug/L
Chlorobenzene	ND	25	ug/L
Dibromochloromethane	ND	25	ug/L
Dichlorodifluoromethane	ND	25	ug/L
Bromodichloromethane	ND	25	ug/L
1,2-Dichloroethane	25	12	ug/L
1,1-Dichloroethene	640	25	ug/L
Chloroethane	ND	50	ug/L
Chloroform	25	25	ug/L
Chloromethane	ND	50	ug/L
2-Chlorotoluene	ND	25	ug/L
4-Chlorotoluene	ND	25	ug/L
1,2-Dibromo-3-chloro- propane	ND	50	ug/L
1,2-Dibromoethane	ND	25	ug/L
Iodomethane	ND	50	ug/L
Isopropyl ether	ND	50	ug/L
1,2-Dichlorobenzene	ND	25	ug/L
1,3-Dichlorobenzene	ND	25	ug/L
1,4-Dichlorobenzene	ND	25	ug/L
1,1-Dichloroethane	9.5 J	25	ug/L
cis-1,2-Dichloroethene	32	25	ug/L
trans-1,2-Dichloroethene	ND	25	ug/L
Vinyl chloride	ND	12	ug/L
2,2-Dichloropropane	ND	25	ug/L
t-Butanol	ND uJ	620	ug/L
1,1-Dichloropropene	ND	25	ug/L
Tert-amyl methyl ether	ND	50	ug/L
Tert-butyl ethyl ether	ND	50	ug/L

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A
W-Mur

TAIT ENVIRONMENTAL

Client Sample ID: TMW_5_WG091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-009 Work Order #....: E8GHP2AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethylbenzene	ND	25	ug/L
Hexachlorobutadiene	ND <i>UJ</i>	25	ug/L
2-Hexanone	ND	120	ug/L
Isopropylbenzene	ND	25	ug/L
p-Isopropyltoluene	ND	25	ug/L
Methylene chloride	ND	25	ug/L
4-Methyl-2-pentanone	ND	120	ug/L
Methyl tert-butyl ether	ND	25	ug/L
n-Propylbenzene	ND	25	ug/L
Styrene	ND	25	ug/L
1,1,1,2-Tetrachloroethane	ND	25	ug/L
1,1,2,2-Tetrachloroethane	ND <i>UJ</i>	25	ug/L
Tetrachloroethene	ND	25	ug/L
Toluene	ND	25	ug/L
1,2,3-Trichlorobenzene	ND	25	ug/L
1,2,4-Trichloro- benzene	ND	25	ug/L
1,1,1-Trichloroethane	ND	25	ug/L
1,1,2-Trichloroethane	25	25	ug/L
Trichloroethene	6500 E <i>R</i>	25	ug/L
Trichlorofluoromethane	ND	50	ug/L
1,2,3-Trichloropropane	ND	25	ug/L
1,2,4-Trimethylbenzene	ND	25	ug/L
1,3,5-Trimethylbenzene	ND	25	ug/L
Xylenes (total)	ND	25	ug/L
Acrolein	ND <i>R</i>	500	ug/L
Acrylonitrile	ND <i>R</i>	500	ug/L
Vinyl acetate	ND <i>UJ</i>	120	ug/L
Tetrahydrofuran	ND <i>J</i>	250	ug/L
2-Chloroethyl vinyl ether	ND	120	ug/L
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS	
Bromofluorobenzene	87	(75 - 130)	
1,2-Dichloroethane-d4	119	(65 - 135)	
Toluene-d8	91	(80 - 130)	

NOTE(S) :

J Estimated result. Result is less than RL.

E Estimated result. Result concentration exceeds the calibration range.

AP
15/14/02

TAIT ENVIRONMENTAL

Client Sample ID: TB_TAIT091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-010 Work Order #....: E8GHQ1AA Matrix.....: WATER
 Date Sampled....: 09/18/02 Date Received...: 09/18/02 16:35
 Prep Date.....: 09/19/02 Analysis Date...: 09/19/02
 Prep Batch #....: 2263312 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING	
		LIMIT	UNITS
Acetone	6.0 J	10	ug/L
Benzene	ND	1.0	ug/L
Bromobenzene	ND	1.0	ug/L
Bromochloromethane	ND	1.0	ug/L
Bromoform	ND	1.0	ug/L
Bromomethane	ND	2.0	ug/L
Carbon tetrachloride	ND	0.50	ug/L
2-Butanone	ND UT	5.0	ug/L
n-Butylbenzene	ND	1.0	ug/L
sec-Butylbenzene	ND	1.0	ug/L
tert-Butylbenzene	ND	1.0	ug/L
Carbon disulfide	ND	1.0	ug/L
Chlorobenzene	ND	1.0	ug/L
Dibromochloromethane	ND	1.0	ug/L
Dichlorodifluoromethane	ND	1.0	ug/L
Bromodichloromethane	ND	1.0	ug/L
1,2-Dichloroethane	ND	0.50	ug/L
1,1-Dichloroethene	ND	1.0	ug/L
Chloroethane	ND	2.0	ug/L
Chloroform	ND	1.0	ug/L
Chloromethane	ND	2.0	ug/L
2-Chlorotoluene	ND	1.0	ug/L
4-Chlorotoluene	ND	1.0	ug/L
1,2-Dibromo-3-chloro- propane	ND	2.0	ug/L
1,2-Dibromoethane	ND	1.0	ug/L
Iodomethane	ND	2.0	ug/L
Isopropyl ether	ND	2.0	ug/L
1,2-Dichlorobenzene	ND	1.0	ug/L
1,3-Dichlorobenzene	ND	1.0	ug/L
1,4-Dichlorobenzene	ND	1.0	ug/L
1,1-Dichloroethane	ND	1.0	ug/L
cis-1,2-Dichloroethene	ND	1.0	ug/L
trans-1,2-Dichloroethene	ND	1.0	ug/L
Vinyl chloride	ND	0.50	ug/L
2,2-Dichloropropane	ND	1.0	ug/L
t-Butanol	ND UT	25	ug/L
1,1-Dichloropropene	ND	1.0	ug/L
Tert-amyl methyl ether	ND	2.0	ug/L
Tert-butyl ethyl ether	ND	2.0	ug/L

(Continued on next page)

A
(v-4)w

TAIT ENVIRONMENTAL

Client Sample ID: TB_TAIT091802_0001

GC/MS Volatiles

Lot-Sample #....: E2I180333-010 Work Order #....: E8GHQ1AA Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Ethylbenzene	ND	1.0	ug/L
Hexachlorobutadiene	ND <i>UJ</i>	1.0	ug/L
2-Hexanone	ND	5.0	ug/L
Isopropylbenzene	ND	1.0	ug/L
p-Isopropyltoluene	ND	1.0	ug/L
Methylene chloride	ND	1.0	ug/L
4-Methyl-2-pentanone	ND	5.0	ug/L
Methyl tert-butyl ether	ND	1.0	ug/L
n-Propylbenzene	ND	1.0	ug/L
Styrene	ND	1.0	ug/L
1,1,1,2-Tetrachloroethane	ND	1.0	ug/L
1,1,2,2-Tetrachloroethane	ND <i>UJ</i>	1.0	ug/L
Tetrachloroethene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
1,2,3-Trichlorobenzene	ND	1.0	ug/L
1,2,4-Trichloro- benzene	ND	1.0	ug/L
1,1,1-Trichloroethane	ND	1.0	ug/L
1,1,2-Trichloroethane	ND	1.0	ug/L
Trichloroethene	ND	1.0	ug/L
Trichlorofluoromethane	ND	2.0	ug/L
1,2,3-Trichloropropane	ND	1.0	ug/L
1,2,4-Trimethylbenzene	ND	1.0	ug/L
1,3,5-Trimethylbenzene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L
Acrolein	ND <i>R</i>	20	ug/L
Acrylonitrile	ND <i>R</i>	20	ug/L
Vinyl acetate	ND <i>UJ</i>	5.0	ug/L
Tetrahydrofuran	ND <i>J</i>	10	ug/L
2-Chloroethyl vinyl ether	ND <i>J</i>	5.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	93	(75 - 130)
1,2-Dichloroethane-d4	130	(65 - 135)
Toluene-d8	93	(80 - 130)

NOTE(S) :

J Estimated result. Result is less than RL.

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10 MUR

LDC #: 9159A1

SDG #: E2I180333

Laboratory: Severn Trent Laboratories, Inc.

VALIDATION COMPLETENESS WORKSHEET

Level III/IV TICs II & TICs III

Date: 10/7/02

Page: 1 of 1

Reviewer: g

2nd Reviewer: k

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 9/18/02
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	M	
IV.	Continuing calibration	M	
V.	Blanks	A	
VI.	Surrogate spikes	M	
VII.	Matrix spike/Matrix spike duplicates	M	
VIII.	Laboratory control samples	A	CCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	A	Not reviewed for Level III validation.
XII.	Compound quantitation/CRQLs	M	Not reviewed for Level III validation.
XIII.	Tentatively identified compounds (TICs)	N	Not reviewed for Level III validation. Not updated.
XIV.	System performance	A	Not reviewed for Level III validation.
XV.	Overall assessment of data	AGW	
XVI.	Field duplicates	M	D = 7 + 9 . 8 + 10 .
XVII.	Field blanks	M	EB = 1 . FB = 2 . TB = 1 T

Note: A = Acceptable

ND = No compounds detected

D = Duplicate

* NO

N = Not provided/applicable

R = Rinsate

TB = Trip blank

SW = See worksheet

FB = Field blank

EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

1	EB_TAIT091802_0001	11	TMW_4_WG091802_0001	21	2263312-BCK	31	
2	FB_TAIT091802_0001**	12	TMW_4_WG091802_0001DL	22		32	
3	TMW_6_WG091802_0001	13	TMW_7_WG091802_0001 **	23		33	
4	TMW_6_WG091802_0001DL	14	TMW_7_WG091802_0001DL **	24		34	
5	TMW_12_WG091802_0001	15	TMW_5_WG091802_0001**	25		35	
6	TMW_12_WG091802_0001DL	16	TMW_5_WG091802_0001DL**	26		36	
7	TMW_1_WG091802_0001	17	TB_TAIT091802_0001	27		37	
8	TMW_1_WG091802_0001DL	18	TMW_1_WG091802_0001MS	28		38	
9	TMW_1_WG091802_0002	19	TMW_1_WG091802_0001MSD	29		39	
10	TMW_1_WG091802_0002DL	20		30		40	

LDC #: Q159A1
SDG #: E21180333

VALIDATION FINDINGS CHECKLIST

Page: 1 of 3
Reviewer: g
2nd Reviewer: [Signature]

Method: Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	/			
Were all samples analyzed within the 12 hour clock criteria?				
III. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?				
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?				
Was a curve fit used for evaluation? If Yes, what was the acceptance criteria used?				
Did the initial calibration meet the curve fit acceptance criteria?				
Were all percent relative standard deviations (%RSD) $\leq 30\%$ and relative response factors (RRF) ≥ 0.05 ?				
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?				
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?				
Were all percent differences (%D) $\leq 25\%$ and relative response factors (RRF) ≥ 0.05 ?				
V. Blanks				
Was a method blank associated with every sample in this SDG?	/			
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		/		
VI. Surrogate spikes				
Were all surrogate %R within QC limits?		/		
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?	/			
VII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	/			
Was a MS/MSD analyzed every 20 samples of each matrix?	/			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		/		

LDC #: 9159A1
SDG #: B21180333

VALIDATION FINDINGS CHECKLIST

Page: 2 of 3
Reviewer: 9
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
VIII. Laboratory control samples				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per analytical batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?				
Were retention times within \pm 30 seconds of the associated calibration standard?				
XI. Target compound identification				
Were relative retention times (RRT's) within \pm 0.06 RRT units of the standard?	/			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	/			
Were chromatogram peaks verified and accounted for?	/			
XII. Compound quantitation/CRQLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			/	
Were relative intensities of the major ions within \pm 20% between the sample and the reference spectra?			/	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		/		
XIV. System performance				
System performance was found to be acceptable.	/			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			

LDC #: 9159A1
SDG #: E2180333

VALIDATION FINDINGS CHECKLIST

Page: 2 of 3
Reviewer: g
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
XVII. Field blanks				
Field blanks were identified in this SDG.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Target compounds were detected in the field blanks.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA SW 846 Method 8260B)

A. Chloromethane*	S. Trichloroethene	KK. Trichlorofluoromethane	CCC. tert-Butylbenzene	UUU. Benzyl chloride
B. Bromomethane	T. Dibromochloromethane	LL. Methyl-tert-butyl ether	DDD. 1,2,4-Trimethylbenzene	VVV. 4-Ethylstyrene
C. Vinyl chloride**	U. 1,1,2-Trichloroethane	MM. 1,2-Dibromo-3-chloropropane	EEE. sec-Butylbenzene	WWW. Ethanol
D. Chloroethane	V. Benzene	NN. Diethyl ether	FFF. 1,3-Dichlorobenzene	XXX. Ethyl ether
E. Methylene chloride	W. trans-1,3-Dichloropropene	OO. 2,2-Dichloropropane	GGG. p-Isopropyltoluene	YY. tert-Butanol
F. Acetone	X. Bromoform*	PP. Bromochloromethane	HHH. 1,4-Dichlorobenzene	ZZZ. tert-Butyl alcohol
G. Carbon disulfide	Y. 4-Methyl-2-pentanoic acid	QQ. 1,1-Dichloropropene	III. n-Butylbenzene	AAAA. Ethyl tert-butyl ether
H. 1,1-Dichloroethene**	Z. 2-Hexanone	RR. Dibromomethane	JJJ. 1,2-Dichlorobenzene	BBBB. tert-Butyl methyl ether
I. 1,1-Dichloroethane*	AA. Tetrachloroethene	SS. 1,3-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	CCCC. 1-Chlorohexane
J. 1,2-Dichloroethene, total	BB. 1,1,2,2-Tetrachloroethane*	TT. 1,2-Dibromoethane	LLL. Hexachlorobutadiene	DDDD. Isopropyl alcohol
K. Chloroform**	CC. Toluene**	UU. 1,1,1,2-Tetrachloroethane	MMM. Naphthalene	EEEE. Acetonitrile
L. 1,2-Dichloroethane	DD. Chlorobenzene*	VV. Isopropylbenzene	NNN. 1,2,3-Trichlorobenzene	FFFF. Acrolein
M. 2-Butanone	EE. Ethylbenzene**	WW. Bromobenzene	OOO. 1,3,5-Trichlorobenzene	GGGG. Acrylonitrile
N. 1,1,1-Trichloroethane	FF. Styrene	XX. 1,2,3-Trichloropropane	PPP. trans-1,2-Dichloroethene	HHHH. 1,4-Dioxane
O. Carbon tetrachloride	GG. Xylenes, total	YY. n-Propylbenzene	QQQ. cis-1,2-Dichloroethene	IIII. Isobutyl alcohol
P. Bromodichloromethane	HH. Vinyl acetate	ZZ. 2-Chlorotoluene	RRR. m,p-Xylenes	JJJ. Methacrylonitrile
Q. 1,2-Dichloropropane*	II. 2-Chloroethylvinyl ether	AAA. 1,3,5-Trimethylbenzene	SSS. o-Xylene	KKKK. Propionitrile
R. cis-1,3-Dichloropropene	JJ. Dichlorodifluoromethane	BBB. 4-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	LLLL. Tetrahydrodefuran

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 912
SDG #: E21180332

VALIDATION FIN GS WORKSHEET

Initial Calibration

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- N N/A Did the laboratory perform a 5 point calibration prior to sample analysis?
- N N/A Were percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?
- Y N/A Was a curve fit used for evaluation? If yes, what was the acceptance criteria used for evaluation? _____
- Y N/A Did the initial calibration meet the acceptance criteria?
- Y N/A Were all %RSDs and RRFs within the validation criteria of $\leq 30\%$ RSD and ≥ 0.05 RRF?

LDC #: 915
SDG #: 180333

VALIDATION FINL AS WORKSHEET

Continuing Calibration

Reviewer: _____

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
- N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's
- N N/A Were all %D and RRFs within the validation criteria of <25 %D and >0.05 RRF?

LDC #: 91
SDG #: E21 R0332

VALIDATION FINDINGS WORKSHEET

Surrogate Spikes

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N/A Were all surrogate %R within QC limits?

Y N/A If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

Reviewer: K
2nd Reviewer:

SSMC1 (TOL) = Toluene-d8
SSMC2 (BFB) = Bromofluorobenzoic acid
SSMC3 (DCE) = 1,2-Dichloroethane
SSMC4 (DFM) = Dibromofluoromethane

<u>QC Limits (Soil)</u>	<u>QC Limits (Water)</u>
81-117	88-110
74-121	86-115
80-120	80-120
80-120	86-118

LDC #: 91
SDG #: 2

VALIDATION FINDINGS WORKSHEET

Matrix Spike/Mat Spike Duplicates

METHOD : GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

N/A

qualifications below for all questions answered "N". Not applicable questions are identified as "N/A". Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this

associated MS/MSD; Soil / Water.

Was a MS/MSD analyzed every 20 samples of each matrix? Were the MS/MSD percent recoveries (%R) and the relative

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Page: _____ of _____
Review: _____
2nd Reviewer: _____

LDC #: 91A
SDG #: 52180332

LDC #: 91 A
SDG #: 621180333
METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

VALIDATION FINDINGS WORKSHEET

Compound Quantitation and CRQLs

SDG #: G21180332

SDG #: G2180333

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y	N	N/A
Y	N	N/A

Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?

Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?

Comments: See sample calculation verification worksheet for recalculations

LDC #: 915
SDG #: 6-0333

VALIDATION FINDINGS WORKSHEET

Overall Assessment of Data

SDG #: 6011803333

Reviewer:
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Sample ID	Finding	Associated Samples	Qualifications
		3.5	← 1552	3.5	E/A
4.6		M except S	4.6		
7.9. 13. 15		S	7.9. 13. 15		
8.10. 14. 16		M except S	8.10. 14. 16		
		H.S.	11		
12		M except H.S.	12		

Comments:

LDC #: 9159A1
SDG #: E21180333

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: _____ of _____
Reviewer: g
2nd reviewer: l

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

N N/A
 Y N/A

Were field duplicate pairs identified in this SDG?
Were target compounds detected in the field duplicate pairs?

Compound	Concentration ($\mu\text{g}/\text{L}$)		RPD
	T	9	
P	0.83	0.82	1
H	170	190	11
K	4.	3.6	15
AA	3.0	3.4	13
S	400	440	10
KK	22	25	13

Compound	Concentration ($\mu\text{g}/\text{L}$)		RPD
	8	10	
H	220	210	5
K	4.9	3.6	31
AA	3.6	3.4	6
S	540	520	4
KK	31	30	3

Compound	Concentration ()		RPD

LDC #: 9159A1
SDG #: 221180333

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: J
2nd reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

N/A
 N/A

Were field blanks identified in this SDG?

Were target compounds detected in the field blanks?

Sample: Field Blank / Trip Blank / Rinsate / Other (circle one)

Compound	Concentration Units (<u>µg</u>)
F	7.3

Sample: 17 Field Blank / Trip Blank / Rinsate / Other (circle one)

Compound	Concentration Units (<u>µg</u>)
F	6.0

Sample: _____ Field Blank / Trip Blank / Rinsate / Other (circle one)

Compound	Concentration Units ()

LDC #: 9157A
SDG #: E2118D 333

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: SJ
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF})/\text{ave. RRF}$$

$$\text{RRF} = \frac{(A_x)(C_s)}{(A_s)(C_x)}$$

Where: ave. RRF = initial calibration average RRF

RRF = continuing calibration RRF

A_x = Area of compound,

C_x = Concentration of compound,

A_s = Area of associated internal standard

C_s = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Average RRF (Initial)		Reported	Recalculated	%D	Reported	Recalculated
				RRF (CC)	RRF (CC)					
1	CS3345	9/19/02	Methylene chloride (1st internal standard)	0.23252	0.22319	0.22319	0.22319	4.0	4.0	4.0
			Trichlorethane (2nd internal standard)	0.54144	0.50040	0.50040	0.50040	-7.6	-7.6	-7.6
			Toluene (3rd internal standard)	0.57910	0.43103	0.43103	0.43103	25.6	25.6	25.6
2			Methylene chloride (1st internal standard)							
			Trichlorethane (2nd internal standard)							
			Toluene (3rd internal standard)							
3			Methylene chloride (1st internal standard)							
			Trichlorethane (2nd internal standard)							
			Toluene (3rd internal standard)							
4			Methylene chloride (1st internal standard)							
			Trichlorethane (2nd internal standard)							
			Toluene (3rd internal standard)							

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 915951
SDG #: Z21180333

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = \frac{(A_x)(C_{is})}{(A_{is})(C_x)}$
average RRF = sum of the RRFs/number of standards
%RSD = $100 * \frac{(S/X)}{X}$

A_{is} = Area of compound,
 C_{is} = Concentration of compound,
 S = Standard deviation of the RRFs
 X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported	Recalculated	Reported	Recalculated	Reported	Recalculated
				RRF (\bar{x} std)	RRF (\bar{x} std)	Average RRF (Initial)	Average RRF (Initial)	%RSD	%RSD
1	144	8/16/2	Methylene chloride (1st internal standard)	0.21535	0.21535	0.23252	0.23252	9.880	9.880
			Trichlorethane (2nd internal standard)	0.52341	0.52341	0.54144	0.54144	7.077	7.077
			Toluene (3rd internal standard)	0.53039	0.53039	0.57910	0.57910	11.151	11.151
2			Methylene chloride (1st internal standard)						
			Trichlorethane (2nd internal standard)						
			Toluene (3rd internal standard)						
3			Methylene chloride (1st internal standard)						
			Trichlorethane (2nd internal standard)						
			Toluene (3rd internal standard)						
4			Methylene chloride (1st internal standard)						
			Trichlorethane (2nd internal standard)						
			Toluene (3rd internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 4159A1
SDG #: E21180333

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Page: 1 of 1
Reviewer:
2nd reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 13

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8	10	8.95939	90	90	0
Bromofluorobenzene	1	8.49566	85	85	0
1,2-Dichloroethane-d4	1	13.1367	131	131	0
Dibromofluoromethane					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

Sample ID: _____

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Toluene-d8					
Bromofluorobenzene					
1,2-Dichloroethane-d4					
Dibromofluoromethane					

LDC #: 21594
SDG #: Z21180333

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: gt
2nd Reviewer:

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Recovery} = 100 * (\text{SSC} - \text{SC}) / \text{SA}$$

Where:
SSC = Spiked sample concentration
SA = Spike added

$$\text{RPD} = | \text{MSC} - \text{MSDC} | * 2 / (\text{MSC} + \text{MSDC})$$

MS/MSD sample: 18/1.9

MSC = Matrix spike percent recovery

MSDC = Matrix spike duplicate percent recovery

SC = Sample concentration

Compound	Spike Added (μg)		Sample Concentration (μg)		Spiked Sample Concentration (μg)		Matrix Spike		Matrix Spike Duplicate		MS/MSD RPD	
	MS	MSD	MS	MSD	MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	100	100	220	296	292	71	76	68	72	1.3	1.4	
Trichloroethene			340	601	588	62	61	49	48	2.2	2.2	
Benzene				N.D.	87.5	87.8	88	88	88	0.37	0.37	
Toluene				ND	86.6	85.4	87	87	85	85	1.3	1.4
Chlorobenzene				1	87.1	85.0	87	87	85	85	2.4	2.4

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 9151
SDG #: E21180333

VALIDATION FINDINGS WORKSHEET

Laboratory Control Sample Results Verification

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Recovery} = 100 * \text{SSC/SA}$$

Where: SSC = Spiked sample concentration
 SA = Spike added

$$RPD = |LCS - LCSD| * 2/(LCS + LCSD)$$

LCS = Laboratory control sample percent recovery

LCSD = Laboratory control sample duplicate percent recovery

LCS ID: 2263312 CES

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 9159A1
SDG #: E21180333

VALIDATION FINDINGS WORKSHEET

Sample Calculation Verification

Page: _____ of _____

Reviewer: T

2nd reviewer: ✓

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Were all reported results recalculated and verified for all level IV samples?

Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

$$\text{Concentration} = \frac{(A_i)(L_i)(DF)}{(A_b)(RRF)(V_o)(\%)S}$$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

V_o = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 14, 3:

$$\text{Conc.} = \frac{(5256193)(10)(25)}{(159535)(0.44145)(\dots)} = 1865.8 \text{ } \mu\text{g}$$